

MECHANICAL ENGINEERING

RECEIVED
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A. C. WILLARD

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Number 1

A.S.M.E. AFFAIRS

Secretary's Letter—A.S.M.E. Council Notes—Nominating Committee for 1920—Professional Section Notes—Local Sections Celebrate Fortieth Anniversary—Standing Committees' Reports—Personals—Necrology—Employment Bulletin—Candidates for Membership

American Engineering Council

The Secretary's Letter

Dr. John R. Mott, the head of the Y. M. C. A. movement, who has traveled extensively abroad and throughout the United States, both during and since the war, states that Herbert Hoover is the most beloved man in the world.

Mr. Hoover is essentially an engineer. He is loyal to the engineer, and attributes his success in welfare work to the employment of engineering methods.

The engineers of the United States have successfully organized themselves into a representative joint body, the American Engineering Council, with Herbert Hoover at its head. What greater inspiration could we have for good works?

I am unalterably opposed to the formation of any more societies. The American Engineering Council, however, is not another society; it is a joint committee, devoted to our work where as a profession we deal with public affairs.

The outstanding feature of this great joint effort is that it is to be made for the good of others instead of for the promotion of any selfish interests involved in our human relationships.

Too long has it been the attitude of the engineer to think impersonally regarding his obligations to society. That day, however, is passing, and the American Engineering Council, representative of many engineering societies of the United States, is now going to express collectively the individual efforts and thoughts of the engineers. And in order for engineers to be forceful they must think on public matters, and train themselves by serving on committees and holding office, first locally and then nationally.

The American Engineering Council is not a super-body—it is a representative body, where each individual not only maintains but enhances his individuality. In it he is given an opportunity for self-expression, which heretofore has been more or less restrained. The societies of which he is a member begin to express themselves unselfishly; and their individuality is not only scrupulously protected, but in proportion as they render service to the community and nation, will their individuality stand out.

Hail to the American Engineering Council!

A.S.M.E. Council Notes

The November meeting of the Council was held in Washington on the 17th in connection with the organization meeting of the American Engineering Council. There were present: President Fred J. Miller; Vice-Presidents Fred R. Low, R. H. Fernald, Dexter S. Kimball, John A. Stevens; Managers D. Robert Yarnall, C. L. Newcomb, F. O. Wells; Past-Presidents D. S. Jacobus, C. T. Main; Chairmen of Standing Committees: E. S. Carman, Local Sections; A. M. Greene, Jr., Research; George A. Orrok, Publications; Frank E. Law (vice-chairman) Finance, and John E. Harrington, Con-

stitution and By-Laws; Guests; W. H. Kenerson, Sections Committee, George A. Weschler, L. A. Fischer, A. R. Cheyney, D. A. Gurney, Washington Local Committee, and M. O. Leighton, Engineering Council; Delegates to American Engineering Council: W. B. Gregory, A. M. Greene, Jr., W. A. Hanley, L. C. Nordmeyer, V. M. Palmer, A. L. Rice, P. Wright, R. Sibley, and H. P. Porter; officers-elect for 1921: E. S. Carman, president-elect, L. P. Alford and R. B. Wolf, vice-presidents-elect; Secretary, Calvin W. Rice.

The Secretary reported the death of Vice-President John R. Allen, and a committee was appointed to prepare resolutions.

Finance. Frank E. Law pointed out that the apparent minimum requirements for the new year showed an excess over apparent income of some \$19,000. To meet this situation his committee suggested three possible programs, as follows:

(1) A curtailed program, with our present income, for this year.

(2) A normal program with increase of dues to \$20 } for the
(3) A desirable program with increase of dues to \$25 } future.

After discussion it was voted that appropriations to committees be curtailed by an amount necessary to make expenditures come within the receipts of the Society. Further, that the suggestions of the Finance Committee be referred jointly to the Finance Committee and the Committee on Local Sections, with the request that they study them, and immediately refer the whole question to the chairmen of local sections; with the request that the Local Sections delegates to the Annual Meeting come prepared to discuss the matter and advise the Council.

Local Sections. The petition for a section in the Lehigh Valley, to include Allentown, Bethlehem, Easton, Phillipsburg and vicinity, was accepted.

Professional Sections. The petition signed by Mr. George H. Perkins and members of the Society for the establishment of a Professional Section on Textiles was approved.

The petition signed by Mr. George A. Orrok and members of the Society for the establishment of a Professional Section on Gas Power was approved.

Research. The Chairman of the Sub-Committee on Bearing Metals, Mr. C. H. Bierbaum, was requested to take out a patent on the Microcharacter and then assign it to the Society, manufacturers to be licensed to use the patent without charge.

Bearing Metals. The report of this committee was received and referred to the Annual Meeting.

Boiler Code. Interpretations of the Boiler Code Committee dated October 14 were approved.

The National Board of Boiler and Pressure Vessel Inspectors was authorized to appoint one of the members of their board a member of the Boiler Code Committee.

The State of Minnesota was granted permission to print part of the Boiler Code, which is copyrighted.

Code of Ethics. The report of this committee was received and referred to the Annual meeting.

Standard Tonnage Basis for Refrigeration. The report of this Committee was received and referred to the Annual Meeting.

American Engineering Standards Committee. Joint sponsorship with the National Safety Council on Standardization of a color scheme for piping installations was accepted.

Membership in American Engineering Standards Committee of

- (1) Department of the Interior of the United States,
- (2) The Gas Group (comprising, at present, the American Gas Association, the Compressed Gas Manufacturers' Association, the International Acetylene Association) to be admitted to membership with three representatives,
- (3) American Electric Railway Association,

was approved.

Appointments by the President. H. de B. Parsons and Daniel E. Moran to represent the Society at the Conference on Highways of the National Research Council.

Engineering Foundation. The Council, in recognizing the splendid gifts of Ambrose Swasey, Honorary Member and Past-President, to Engineering Foundation, directed the Secretary to have resolutions framed.

National Screw Thread Commission. Mr. Ralph E. Flanders was nominated to the Secretary of Commerce for appointment on the National Screw Thread Commission, in place of Governor Hartness.

Adjournment. It was voted to adjourn to meet in New York December 7, in connection with the Annual Meeting of the Society
CALVIN W. RICE, *Secretary.*

Regular Nominating Committee for 1921

At the Annual Business Meeting of the Society held in New York on December 8 in connection with the Annual Meeting, the following were elected as the Regular Nominating Committee for 1921 on the recommendation of the Local Sections delegates which met the day before and made nominations for the purpose:

GROUP	SECTIONS	COMMITTEE	ALTERNATES
1	Boston, Worcester Connecticut Philadelphia Baltimore Eastern N. Y.	Elmer Smith, Boston, Mass.	J. A. Hall, Providence, R. I.
2	New York (Metropolitan Sec.).	G. K. Parsons, New York, N. Y.	W. Herman Greul, New York, N. Y.
3	Washington, D. C. Virginia Atlanta Birmingham New Orleans	W. W. Varney, Baltimore, Md.	
4	Rochester Buffalo Toronto (Ont.) Erie Cleveland Milwaukee Chicago Indianapolis Detroit Cincinnati	B. S. Hughes, Buffalo, N. Y.	L. S. Lacy, Syracuse, N. Y.
5	St. Paul-Minneapolis (Minnesota Sec.) St. Louis Mid-Continent Colorado Houston	W. M. White, Milwaukee, Wis.	J. D. Cunningham, Chicago, Ill.
6	Los Angeles San Francisco Oregon Washington State	F. E. Bausch, St. Louis, Mo.	D. E. Foster, Tulsa, Okla.
7		B. O. Eastwood, Seattle, Wash.	H. L. Doolittle, Los Angeles, Cal.

William B. Gregory Nominated to Vacant Vice-Presidency

TO THE MEMBERS OF THE COUNCIL:
Gentlemen:

Your committee appointed by the President to serve as a Committee to nominate a Vice-President to fill the unexpired term of John R. Allen has been guided by the following considerations:

- a Geographical distribution of members of the Council.
- b The recognition of the stamp of general endorsement of

the Society as a whole which has already been expressed through the election of certain members as Managers.

- c The belief that the experience gained as Manager will materially add to effective and efficient service as Vice-President.

Based on these considerations your Committee takes pleasure in nominating William B. Gregory, of New Orleans, La., to fill the vacancy, i.e., until the Annual Meeting, 1921.

Respectfully submitted,
ROBERT H. FERNALD,
FRED R. LOW,
E. S. CARMAN.

December, 6, 1920.

Professional Sections Notes

Gas Power Section. The Council has formerly approved the petition of members for the formation of this section "to promote the mechanical engineering of gas power and to keep the membership generally informed regarding current developments in this field by preparation of professional papers or by discussion or debates at meetings of the sections or at meetings of the Society."

The petition was transmitted by Mr. George A. Orrok and 356 members have now registered in the Section.

Textile Section. At a meeting held in the office of Past-President Main in Boston on November 12, a petition for this Section was drawn up and transmitted to the Council by George H. Perkins. The Council has accepted the petition and authorized the Section. Two hundred and eighty members have jointed the Section so far.

A session was held on December 10 in connection with the Annual Meeting of the Society, and Mr. Charles T. Plunkett, Past-Vice-President of the Society and former chairman of the Sub-Committee on Textiles of the Committee on Meetings, presided.

The result of the letter ballot for the election of officers for the Textile Section is announced as follows:

Executive Committee:

CHARLES T. PLUNKETT, *Chairman*, Adams, Mass.
SIDNEY B. PAINE, *Vice-Chairman*, Boston, Mass.
CHARLES R. MAIN, Boston, Mass.
WILLIAM D. HARTSHORNE, Methuen, Mass.
JAMES A. CAMPBELL, Pawtucket, R. I.

Secretary:

GEORGE H. PERKINS, Boston, Mass.

Ordinance Section. The petition signed by 172 members of the Society requesting the formation of an Ordinance Section was approved by the Council at its meeting held on December 10.

The organization meeting was held on December 9 at which Col. C. L. H. Ruggles, Ordinance Department U.S.A., representing the Chief of Ordinance, requested the coöperation of engineering societies in the consideration of ordinance problems.

Materials Handling Section. This section held an informal meeting on the Adjournment of the Transportation Section of the Annual Meeting of the Society, held in New York on Thursday, December 9.

The Executive Committee of this Section is anxious to determine the desires of the membership as to the activities to be pursued. To assist in this, they ask that all members interested in material handling answer the following questions and send their answers in to Society Headquarters as soon as possible:

- 1 In what phases of Material Handling are you personally and directly interested? [(a) Types of equipment; (b) Applications, (c) Economic costs, etc.]
- 2 From this personal viewpoint, how can the Material Handling Section function to best serve you? Please elaborate fully.
- 3 In what broad ways can this Section coördinate the work of engineers in all branches of Material Handling so that each man who is interested in a part of the problem may see his relation to the problem as a whole?
- 4 Have you in your work encouraged certain phases of Material Handling which touched general economic problems, and how?
- 5 What is the character of papers you would be most interested in? [(a) Descriptive of Applications; (b) Descriptive of Apparatus; (c) Applications as to Industries; (d) Which papers are of most value to you; those which discuss details of a problem or those which give a broad picture of a general problem to be discussed in detail? (e) Economic.]

Local Sections Celebrate Fortieth Anniversary by Simultaneous Meetings Throughout the Country

IN its December issue MECHANICAL ENGINEERING presented an account of the special meeting held in New York to celebrate the Fortieth Anniversary of the first meeting of the Society and at which addresses were made by J. Herbert Case, Samuel Gompers, and William B. Dickson on the Opportunity and Responsibility of the Engineer. Simultaneously with this successful meeting the Local Sections held meetings throughout the entire country, and each gathering, containing in its program features common to all other meetings, became not a separate celebration, removed and disconnected from the whole, but in a very real sense a session of a larger gathering.

This unity was effected through phonograph speeches by President Miller and Past-President Hollis, which were prepared in the laboratory at Waterbury, Conn., of one of our members, Prof. Wm. H. Bristol. Those who heard these records and whose comments have been received at Society Headquarters—especially those in the far-distant Sections—tell of the inspiration which came as a result of hearing the voices of President Miller and Past-President Hollis, and realizing that in all parts of the country engineers were likewise listening to the same voices.

Again, greetings were received from all over the world and read at all the meetings. British, French, Belgian, Italian, and Cuban engineering societies, besides a host of engineers of high achievement in foreign countries and some Honorary Members of our Society, all sent messages of felicitation. Notable American engineers also added their contribution in the way of greetings and President-Elect Harding telegraphed: "The Administration which comes into power next March fourth very much wishes the advice and coöperation of the membership."

From the foregoing features the programs were varied in infinite ways. Some meetings were formal, others informal; some included excursions and trips of inspection, others the reading and discussing of papers; some were banquets, other smokers; but whatever the form, all centered around the unity of thought which, reviewing the accomplishments of the past, gave inspiration for the future. Brief accounts of the various Section meetings follow.

BOSTON

Members of the Boston Section to the number of 300 met at the City Club for a formal dinner at which Past-President Main presided. Mr. Main reviewed the growth of the Society and declared that "service" had always been its motto—"Service to the members, service to the public, and service 'to science.'" Other speakers of the evening were F. W. Dean, former Vice-President, who gave an intimate sketch of the lives and attainments of the early members of the Society; A. E. Baird, of Caines Institute, who told of the scientific inventions of the early magicians and priests, and La Rue Vredenburgh, who discussed the human element in engineering. The Boston Section also sent greetings to all the other Sections, and relayed greetings which it received from President-Elect Harding, Governor Coolidge, and Mayor Peters.

PROVIDENCE

The Providence meeting, held in the rooms of the Providence Engineering Society, was preceded by a dinner at the University Club. Luther D. Burlingame gave some reminiscences of the early days of the Society and of the meetings held in Providence in 1872. C. E. Emmons, a chemist with The Texas Company, spoke on Oil Refining. The following day the Section made a trip to the plant of the Standard Oil Company at East Providence.

WORCESTER

The Executive Committee in Worcester has arranged for the coming year a series of talks and discussions on Worcester Industries. The Fortieth Anniversary Celebration was the first of the series and the subject was Steel. George I. Alden presided and gave a brief account of the accomplishments of the Society and outlined what he conceived to be its future field of usefulness. Jerome R. George spoke on the subject of A Unique Rolling Mill.

WASHINGTON

The Washington, D. C., Section had a meeting worthy of the capitol city. Professor Fernald was a guest and reviewed the work and history of the Society and its place among the other technical societies. He made a plea for the whole-hearted support of American Engineering Council. Commander W. R. Purnell, U.S.N., in charge of the fuel-oil testing plant at the Philadelphia Navy Yard, also spoke and gave some Points on Burning of Fuel Oil. His paper covered many practical points on fuel burning, including the design of spray nozzles, tolerances, mixtures, etc. The Manufacture of Gas as an Industrial Fuel was discussed by Thomas King, superintendent of fuel sales, Consolidated Gas, Electric Light and Power Co. of Baltimore and C. L. Davison, engineer with the General Electric Co., Philadelphia, spoke on Flow Meters.

CONNECTICUT BRANCHES

The Connecticut Section celebrated the Anniversary by Branch meetings in Waterbury, New Haven, and Hartford. In a very real sense the meeting at Waterbury was the keynote session of the anniversary, for it was at the Platts Mills Laboratory of Professor Bristol that the phonograph records by President Miller and Past-President Hollis were synchronized with the moving-picture films. It was the first public exhibition of the synchronizing device, and the members in attendance were justified in their pride of feeling that they were at the very center of things on that occasion.

The Bridgeport, Meriden, and New Haven Branches met at New Haven during the afternoon and evening. The afternoon meeting was held at the Mason Laboratory of Yale University and J. R. Caldwell gave a talk on the new plant of the Seamless Rubber Co. at New Haven. Afterward the ninety-five members and guests present were conveyed by automobiles to the plant where two hours were spent in its inspection. The evening session was held at North Sheffield Hall, in order to accommodate the audience of three hundred attracted by the meeting on superpower. Professor Breckenridge presided and introduced W. S. Murray, chairman of the engineering staff of the Superpower Survey, who presented very fully the plans of the survey.

At Hartford Professor Greene was present to tell the members something of the work of the Society in the past, and the larger work it is going to do in the future. F. T. Moore, of the Colt Manufacturing Co., reviewed the early history of his company and the development of firearms; and H. B. Maxim discussed the development of the automobile industry in Hartford.

INDIANAPOLIS

The observance by the Indianapolis Section was in the form of a dinner at the University Club in that city. Following the dinner, Chairman Brossman welcomed the members and guests, and the secretary read the telegrams of congratulation. Dr. C. L. Mees, president emeritus of Rose Polytechnic Institute, was the guest of the evening and gave an address on The Past and Future of Engineering. Dr. Mees showed that in the past the advancement of the world came with the advance in the knowledge of engineering and stated that in the future the same conditions would probably prevail.

ONTARIO

The celebration by the Ontario Section was held in the School of Science Building at the University of Toronto. Prof. James Trail gave an illustrated talk on the Power Canal of the Chippawa development of the Hydro-Electric Power Commission. After the lecture an attempt was made to get in touch by wireless telephone with the Boston Section, which was sending out messages in connection with its part of the anniversary celebration. The local receiving apparatus was working perfectly and picked up messages from a number of sources, but none from Boston.

ATLANTA-BIRMINGHAM

The Atlanta Section made an inspection of the Federal Prison during the afternoon of the fifth and also visited the plant of the Hansom Motor Car Company. Earl F. Scott, a manager of the Society, reviewed the history of the Society and Dr. J. S. Coon, of the Georgia School of Technology, one of the twenty-five living organization members of the Society, told a short story respecting each one present at the first annual meeting.

At Birmingham the occasion was marked as the fifth anniversary of the Local Section. The program began at 11.00 a.m. by a visit to the model plant villages for white and colored employees at Acipco. Lunch was served in the American Cast Iron Pipe and Foundry Company's dining room and short talks were given by John Moore, chief engineer and J. R. McWane, president of the company. Other trips of inspection were made during the afternoon, and at 6.00 p.m. the party returned to the Southern Club for dinner. While there was no set program in connection with the dinner, A. M. Kennedy, who has been connected with the laboratory of Thomas A. Edison, gave a short but interesting talk on the manufacture of phonograph records and the technic of recording.

AKRON-COLUMBUS-CINCINNATI-TOLEDO

The meeting at Akron was held in the rooms of the Engineering Society of Akron. Prof. F. O. Ellenwood, chairman of the Akron Section, presided. The attendance was small but those present enjoyed the meeting, renewed and increased their loyalty to A.S.M.E., increased their knowledge of its past and obtained additional confidence in its future.

Columbus celebrated by a dinner at the Southern Hotel. Col. E. A. Deeds, of Dayton, was the guest of the evening and delivered an address. His subject was Some Observations on My Recent European Trip, and these covered the political, industrial, and economic conditions of Europe. It was followed by a request for greater civic service by Col. H. M. Bush in connection with certain municipal utilities and the police department of Columbus.

Cincinnati's celebration was carried out by a dinner at the Business Men's Club. James B. Stanwood, former manager of the Society and who had been a member longer than any other person present, gave some very interesting reminiscences of his acquaintance with certain of the founders of the Society, particularly Prof. John E. Sweet and Alexander L. Holley. George W. Galbraith also spoke of the work of the mechanical engineers in Cincinnati who were early associated with the Society, and of the development of the Cincinnati Section in 1912.

Toledo celebrated the anniversary on the fourth of November, and besides the features uniform at all meetings, a paper on New Developments in Steam Distribution was presented by George H. Hartman of the Locomotive Appliance Company. A small demonstrating model of a locomotive cylinder with one drive wheel, connecting rods and complete valve gear of the new type was on display at the meeting. Mr. Hartman gave a short history of the developments in the use of steam, and discussed the essential features and advantages of the new type of valve gear. This new mechanism was invented and designed by Mr. Chas. J. Pilliod of the Locomotive Appliance Co.

PHILADELPHIA

The Philadelphia meeting was in the form of a smoker held in the Hotel Adelphia Roof Garden. The arrangements were quite elaborate—including music, entertainment, and refreshments. Past-President Hollis was a guest and delivered an address on The Engineer's Place in History. The other speaker, Benjamin Lichty, vice-president of The Eisenlohr Company, gave a very interesting and instructive talk on The Manufacture of Tobacco.

SAN FRANCISCO

At San Francisco an excursion was made to the Mare Island Navy Yard, where through the courtesy of Capt. E. L. Beach, U. S. N., Commandant of the Yard, the members of the Local Section and their friends inspected the U.S.S. *California*, now nearing completion. The battleship is by far the largest vessel ever constructed on the Pacific Coast and typifies all that is modern in naval design. Luncheon was served at the Navy Yard as the

party did not return to "Frisco" until 6 p.m. Dinner was served on board the boat homeward bound.

CHICAGO-COLORADO

The anniversary was celebrated by the Chicago Section on November 22. Short addresses appropriate to the occasion were given before the speaker of the evening, Dr. G. O. Smith, Director of the United States Geological Survey at Washington, was introduced. Dr. Smith gave a most interesting and instructive talk on Industries' Supply of Energy.

Colorado also celebrated late in the month—on the twenty-fourth. The meeting was held as a dinner at the Metropole Hotel. Dr. George H. Norlin, president of the University of Colorado, was the guest of the evening and spoke on Engineering at the University. Mr. Wilkinson, chairman of the Local Section, reviewed the activities of the Society.

DETROIT

The Detroit Section observed the anniversary by meeting jointly with the Detroit Engineering Society. Henry M. Leland, president of the Lincoln Motor Car Company, gave a brief history of the founding, growth and service of the Society, and E. J. Mehren, editor of the *Engineering News-Record*, spoke on An Engineer's Observations in Europe.

CLEVELAND

Dean Alfred Ayers, of the School of Engineering in Akron University, presided at the Cleveland celebration which was held in the Hotel Statler. Addresses were made by President-Elect Carman, Past-President Worcester R. Warner, of the Warner Swasey Company, and William R. Rose, Associate Editor of the *Cleveland Plain Dealer*. Forecasts of the Society's work and advancement were made by the speakers and Mr. Carman prophesied that the present membership would be doubled during the next forty years. Past-President Ambrose Swasey, who with Mr. Warner and Mr. Charles F. Brush was a charter member of the Cleveland Section, was unable to attend the celebration because of illness.

OTHER SECTION MEETINGS

At New Orleans the Local Section met at Tulane University; Washington State celebrated jointly with the Student Branch at the University of Washington; and Baltimore met with the Engineers' Club of Baltimore to hear Morris L. Cooke, of Philadelphia, deliver an address on The Inspiring Outlook Before American Engineering. Los Angeles entertained Prof. Carl C. Thomas, of the Dwight P. Robinson Company, as its guest. The Minnesota Local Section held a Ladies' Night and met in the Palm Room of the St. Paul Hotel. Members of all engineering societies in the State were invited. The big Houston-Mid-Continent joint meeting at Dallas on October 15 and 16 mitigated against the holding of anniversary meetings by these Sections, but Mid-Continent persisted in her enthusiasm and carried out a simple program at Tea Cup Inn, Tulsa, Okla. St. Louis was similarly affected by other arrangements, but met at the residence of Clarence H. Howard for an informal discussion. Syracuse held an informal dinner and smoker at the Chamber of Commerce Club House.

A War Memorial

A unique and splendid War Memorial has been prepared in recognition of employees of the Brown and Sharpe Manufacturing Company who served either at home or abroad during the Great War. This memorial is in the form of a booklet, of nearly one hundred pages, containing portraits of the boys who lost their lives, together with an account of the service they rendered; an honor roll of the 911 men who entered active service, giving their length and branch of service; records of distinguished service and extracts from letters giving accounts of service and experiences, and a record of the service of employees remaining at the factory, describing their participation in various war funds and activities, as well as splendid cooperation in the work of the factory itself. The employees of the Brown and Sharpe Manufacturing Company made an honorable and a distinguished record which it is purposed to perpetuate by this memorial booklet.

Annual Reports of A.S.M.E. Standing Committees

THE annual reports of the Standing Committees of The American Society of Mechanical Engineers were received by the Council at its meeting in Washington on November 17. They were ordered printed and made available to the membership at the Annual Meeting in December. A complete report of the Financial Committee is printed herewith, as it is believed that its importance warrants full distribution to the membership. Complete copies of the remaining reports, a synopsis of which is printed on page 7, may be obtained upon request.

Report of Finance Committee

TO THE COUNCIL:

The total gross receipts of the Society from all sources for the fiscal year, October 1, 1919, to September 30, 1920, were \$433,899.07, and the gross expenditures chargeable to current receipts were \$426,666.91, leaving an excess of receipts over expenditures of \$7,232.16.

Deducting from the gross receipts the amounts spent (a) to handle new membership applications, (b) to secure and produce the advertising in the publications, (c) to handle sales of publications, and reserving \$21,300.00 for obligations undertaken but not completed at the end of the fiscal year, the net current income was \$285,001.81, and the expenditures chargeable against this income \$277,769.65, leaving an excess of \$7,232.16 as above. The net figures indicate the amounts received and spent for committee activities.

Appended are the audited reports of the accounts of the Society for the fiscal year ended September 30, 1920.

Based on a membership of 11,750 (the average of the total membership for the year, October 1, 1919, to October 1, 1920), the average gross current receipts of the Society per member for the fiscal year just closed are tabulated below. The corresponding receipts for the preceding year are included for comparison.

AVERAGE GROSS RECEIPTS PER MEMBER

	1918-1919	1919-1920
Membership Dues.....	\$13.56	\$14.40
Initiation Fees.....	3.64	3.47
Sales—Gross Receipts.....	3.12	4.30
Advertising.....	11.38	14.00
Interest and Discount.....	0.94	0.69 ¹
	<u>\$32.64</u>	<u>\$36.86</u>

¹ About 20 cents per member, Interest transferred for life members and members whose dues were remitted.

Based on the same average membership, the expenditures per member for the fiscal year just closed are also given below, together with the corresponding expenditures per member for the previous year for comparison.

AVERAGE GROSS EXPENDITURES PER MEMBER

	1918-1919	1919-1920
Meetings, Annual and Spring.....	\$ 1.45	\$ 1.32
Publications:		
Journal (MECHANICAL ENGINEERING).....	9.79	11.40
Condensed Catalogues.....	2.42	3.65
Transactions.....	2.50	2.81
Year Book.....	0.96	1.32
	<u>15.67</u>	<u>19.18</u>
Membership and Increase of Membership.....	1.48	0.47
Office Administration.....	3.94	4.23
Upkeep of Headquarters.....	0.69	0.10
Aims and Organization and Joint Conference Committee.....	0.62	0.25
Joint Activities:		
Assessment to U. E. S.....	0.51	0.58
Library.....	0.45	0.55
Engineering Council.....	0.38	0.42
Employment Bulletin.....	0.23	0.24
American Engineering Standards Committee.....		0.13
	<u>1.57</u>	<u>1.92</u>
Local Sections.....	1.97	2.76
Council, Contingencies, Mileage.....	1.66	1.22
Student Branches.....	0.04	0.08
Cost of Sales (Publications, Pamphlets, etc.).....	1.69	3.43
Engineering Committees (Standardization, Research, Boiler Code, Power Test Codes, etc.).....	1.36	1.29
Professional Sections.....		0.11
Other Activities.....	0.29	0.14
TOTAL.....	<u>\$32.43</u>	<u>\$36.50</u>

Expenditures do not reveal that the original requests of committees for appropriations were over \$40,000 in excess of available income, and that to keep expenditures within income necessitated a curtailment of activities

represented by that amount, about 12 per cent. The responsibility for this curtailment was assumed by the Finance Committee as an obvious duty.

DEVELOPMENT WORK

In addition to the activities charged to current income, the Publication and Papers Committee continued its development of MECHANICAL ENGINEERING, the expenditures incurred during the year being charged against the three-year loan from Reserve granted by the Council last year and to be repaid.

Also, the Local Sections Committee, under similar authority, undertook an aggressive campaign to develop the membership, which will show results in next year's return, and the money thus spent will be repaid.

The statement of these development activities is as follows:

	Authorized	Expended
MECHANICAL ENGINEERING (Three-Year Loan)...	\$19,000.00	\$9,161.33
Development of Membership.....	8,600.00	8,600.00

AUTHORIZATIONS FROM RESERVE ACCOUNT

In addition to the above two items charged against Reserve, the Council also authorized to be taken from this account \$2,500 additional for Research, \$2,000 additional for Engineering Council and \$1,000 additional for Joint Conference Committee.

As offsetting these withdrawals from Reserve, the \$7,232.16 excess of current income over current expenditures was by direction of the Council turned back into Reserve, to be applied as a repayment against the amount borrowed from that fund for development work.

The statement of reserve account is as follows:

STATEMENT OF RESERVE ACCOUNT AS OF OCTOBER 1, 1920

Reserve, October 1, 1919.....	\$151,973.52
Excess of current income over expenditures, 1919-20.....	<u>7,232.16</u>
	\$159,205.68

Less expenditures from Reserve as follows:

Excess expenditures over anticipated for unfilled obligations 1918-19.....	\$ 4,175.81
Cancelled arrears.....	3,104.52
Expenditures for Journal Development (\$9,000 loan for 3 years authorized by Council).....	9,161.33
Expenditure for membership development authorized by Council.....	8,600.00
Additional assessment for Engineering Council, authorized by Council.....	2,000.00
Additional expenditure for Research, authorized by Council.....	2,500.00
Additional assessment for Joint Conference Committee, and loaned by Council.....	<u>1,000.00</u>
	<u>\$30,541.66</u>

Reserve, October 1, 1920.....	\$128,664.02
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NEW FISCAL YEAR

As great as are our expenditures, both relatively to other societies and absolutely, nevertheless the activities of the past two years have necessarily been restricted to keep current expenditures within income. Unless additional income is forthcoming, the same policy will have to be pursued next year.

For 1920-1921 the Finance Committee estimates the total current income available from the several sources as follows:

	Estimated Gross Income	Estimated Net Income
Membership Dues.....	\$195,000	\$173,210 ¹
Initiation Fees.....	51,000	41,440 ¹
Interest.....	7,000	7,000
Advertising:		
MECHANICAL ENGINEERING.....	130,000	75,000 ²
Condensed Catalogues.....	70,000	25,000 ²
Sales.....	72,500	25,000 ³
	<u>\$525,500</u>	<u>\$321,650</u>

¹ Rebate (estimated) of \$9,650 to Local Sections deducted.

² Cost of production deducted.

³ Cost of handling deducted.

The Finance Committee has accepted for the time being the responsibility of restricting appropriations to bring them within the above estimated income, and has made the following tentative recommendations of appropriations:

	Recommended Appropriations
Membership and New Members.....	\$ 28,000
General Meetings.....	16,500
Publications (MECHANICAL ENGINEERING, Transactions, Condensed Catalogues, Sales).....	267,000
Council and Mileage.....	14,000
Local Sections.....	40,000

Professional Sections.....	4,000
Standardization, Research, Power Test Codes	12,000
Boiler Code.....	6,000
Library.....	8,000
House.....	1,350
Student Branches.....	2,500
Federated Societies and Joint Conference Committee.....	15,650
Engineering Council to Jan. 1.....	1,250
Employment Service to Jan. 1.....	750
American Engineering Standards Committee.....	1,500
Office and General Expense.....	55,000
United Engineering Society (Rooms).....	7,000
Reserve.....	25,000
Unexpected Activities.....	20,000
	<u>\$525,500</u>

Since these recommendations involve considerable restriction of the activities which do allow of curtailment (being neither income-producing nor fixed charges), the Council instructed the Finance Committee and the Committee on Local Sections to submit the financial situation to the Local Sections delegates, who will assemble at the Annual Meeting of the Society and ask an expression of their views as to what should be done, and specifically, whether they think the members of the Society would be favorable to an increase in dues. A restricted program of activities during the coming year is unavoidable without an increase in income.

It is not perceived, however, how any additional income of moment can be secured in the coming year. Even if, after full study of the question, it should be deemed advisable to submit to the membership the question of increasing the dues, and upon such submission the members should vote in favor of the increase, the change to higher dues could not become effective till a year hence. Serious as the necessary curtailment is going to be, it is the opinion of the Finance Committee that the situation should be faced frankly and the expenditures kept within the income. Current activities should be paid for out of current income. The Society should not, as it seems to the Finance Committee, trench further upon its reserve.

It is the opinion of the Finance Committee that the reserve should be built up to the point where it equals fifty per cent (50%) of the annual gross income of the Society, and that to this end, five per cent (5%) of the annual gross income of the Society should be set aside and added to the reserve. Thus, the expected gross income this coming year being \$525,500, the reserve ought to be at least \$260,000, instead of \$128,000 as it is, and \$25,000 should be set aside and added to the reserve this year. It should be borne in mind that of the \$128,000 reserve, only about \$90,000 is liquid, and must perform the function of working capital as well as reserve. There has been a depletion of the reserve, and there should now be, as it seems to the Finance Committee, a determined effort to reverse the process, and again build up the reserve. There is but one way to do this, and that is to cut the garment according to the cloth. Otherwise the Society will surely get into financial trouble at no distant date.

Respectfully submitted,

GEORGE M. FORREST, *Chairman*
FRANK E. LAW, *Vice-Chairman*
LOUIS C. MARBURG
ERIK OBERG
CHARLES P. COLEMAN

Finance Committee.

REPORT OF ACCOUNTANTS

FINANCE COMMITTEE,
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.

Dear Sirs:

In accordance with your instructions, we have examined the books and accounts of The American Society of Mechanical Engineers for the twelve months ended September 30, 1920.

The results of this examination are set forth in the two exhibits, attached hereto, as follows:

Exhibit A—Balance Sheet, September 30, 1920.

Exhibit B—Income and Expenses for the twelve months ended September 30, 1920.

We certify that, in our opinion, the accompanying Balance Sheet is a true exhibit of its financial condition as of September 30, 1920, and that the attached statement of Income and Expenses is correct.

Respectfully submitted,

(Signed) WM. J. STRUSS & Co.,
Certified Public Accountants.

EXHIBIT A

SEPTEMBER 30, 1920, BALANCE SHEET

ASSETS

Society's one-quarter Interest in the Building, Land and Real Estate Equipment, No. 25 to No. 33 West 39 Street.....	\$486,792.79
Library Books.....	\$13,000.00
Furniture and Fixtures.....	5,000.00
	<u>18,000.00</u>
Stores, including plates and finished publications.....	36,216.56
Engineering Index.....	10,000.00

Trust Funds Investment:	
Liberty Bonds.....	7,000.00
New York City 3½%, 1954 (par \$45,000).....	39,696.81
St. L., Peoria & N. W. 1st 5%, 1948 (par \$10,000).....	10,613.89
United New Jersey Canal Co. (par \$1000).....	970.00
Cash in banks representing Trust Funds.....	753.78
	<u>59,034.48</u>
Liquid Assets:	
Liberty Bonds.....	48,000.00
United Engineering Society.....	2,500.00
Accounts Receivable:	
Members' Dues.....	\$17,810.42
Initiation Fees.....	8,169.58
Sales of Publications, Advertising, etc.....	84,438.87
	<u>110,418.87</u>
Cash: In banks for general purposes.....	4,643.63
Petty Cash Fund.....	2,000.00
	<u>6,643.63</u>
	<u>167,562.50</u>
Advance Payments.....	33,972.96
Unexpended Appropriation 1918-19.....	4,175.81
	<u>\$815,755.10</u>

LIABILITIES

Trust Funds:	
Life Membership.....	\$46,326.92
Library Development.....	4,902.71
Week's Legacy.....	1,957.00
Melville Medal Fund.....	1,138.86
Hunt Memorial.....	208.99
Hess Juniors' Prize.....	1,000.00
Hess Students' Prize.....	1,000.00
Charles T. Main Award.....	2,500.00
	<u>\$59,034.48</u>
Notes Payable.....	39,603.33
Accounts Payable.....	18,323.35
James Watt Memorial.....	296.00
Initiation Fees uncollected.....	8,169.58
Replacement Fund.....	1,163.18
Dues paid in advance.....	2,471.23
Unappropriated Revenue.....	8,899.07
Unexpended Appropriation 1919-1920.....	14,133.09
Capital Investment.....	514,792.79
Surplus and Reserve.....	148,869.00
	<u>663,661.79</u>
	<u>\$815,755.10</u>

EXHIBIT B

INCOME

Membership Dues.....	\$169,567.28
Interest.....	8,122.88
	<u>\$40,805.42</u>
Initiation Fees.....	5,589.48
	<u>102,145.41</u>
Advertising.....	63,812.54
	<u>62,484.82</u>
Condensed Catalogues.....	39,421.23
	<u>50,773.26</u>
Sales.....	40,074.01
	<u>10,699.25</u>
TOTAL.....	<u>285,001.81</u>

EXPENSES

Office and Supervision.....	\$49,725.11
Assessments.....	24,485.40
Council and Contingencies.....	14,340.21
Publications:	
MECHANICAL ENGINEERING Text.....	70,804.09
Transactions.....	33,058.85
Year Book.....	15,599.68
Local Sections.....	32,191.03
Meetings, General.....	15,515.38
House.....	1,991.66
Student Branches.....	947.50
Research.....	3,947.67
Standardization and Technical Committees.....	13,720.23
Joint Conference Committee.....	1,979.05

Professional Sections.....	1,274.62
Miscellaneous.....	3,689.17
TOTAL¹.....	283,269.65

Excess of Income over Expenses..... \$1,732.16

¹ The item of total expenses includes \$21,300 not yet paid to complete work already in process and chargeable to this year's activities.

Extraordinary expenses amounting to \$5,500 included in Current Expenses were authorized, by act of Council, to be taken from Reserve. This reduces Current Expenses by that amount, and, with the \$1,732.16 shown as excess of income over expenses, \$7,232.16 is turned back into Reserve, and by direction of Council is a repayment to be applied against the amount borrowed from Reserve for development.

Synopsis of Annual Committee Reports

Meetings and Program Committee. The rapid increase in size of the Spring Meetings led the Committee to solicit an opinion as to what character the Spring Meetings should assume in the future. This opinion was in favor of continuing the Spring Meetings at industrial centers and making trips to study engineering developments and industrial plants.

The Spring Meeting in Chicago in 1921 is planned to be of the nature of a congress of mechanical engineers, in cooperation with other mechanical engineering societies.

The Committee reported an agreement reached with the new Standing Committee on Professional Sections regarding the conduct of Professional Section meetings held at the Annual or Spring Meetings.

The Committee instituted a new work of publicity resulting in the formation of an informal Publicity Committee and the appointment of an experienced publicity man to assist in interpreting to the public the important activities of the Society.

Publication and Papers Committee. The report calls attention to the fact that all the publications have been maintained as in past years, and are self-supporting in spite of the large increases in manufacturing costs.

Membership Committee. Of the 3106 applications handled during the year, 1728 were recommended for membership or promotion. There were 446 Members elected, 503 Associate-Members, 587 Juniors and 67 Associates.

Local Sections Committee. Nine new Local Sections have been established, bringing the total number to thirty-eight.

The work of the former Increase of Membership Committee has now been turned over to this Committee.

The Local Sections conferences, held in connection with the General Meetings, have been successful and have developed important matters of Society policy.

The Committee recommends regional secretaries, as these in large centers could take care of the activities of the Local Sections of all national societies.

Professional Sections Committee. Seven months' activity has resulted in the formation of nine of the eleven sections authorized by the Council.

By-Laws governing the Professional Sections activity have been framed.

The total registration in the Professional Sections is now over 6000.

Six of the Professional Sections held sessions at the Annual Meeting, 1920.

The Special Committee, which was appointed by the Council to inaugurate this activity, has been discharged upon the organization of the Standing Committee, composed of the elected chairmen of the Sections.

Constitution and By-Laws Committee. Amendments to the Constitution and to the By-Laws for the year are enumerated.

The report recommends a revision of the Constitution, By-Laws and Rules, the Committee feeling that the present documents could be very much simplified. A Constitutional Convention is recommended to formulate the general policy of the Society after which it could be phrased.

House Committee. The duties of this Committee have, by act of Council, been referred to the Finance Committee, who will hereafter assume charge of all the rooms of the Society and their contents.

Research Committee. Progress reports of sub-committees on Lubrication, Bearing Metals, Fluid Meters, Heat Transmission, Permanency and Accuracy of Indication of Instruments, Riveted Joints, Cutting Action of Cutting Tools, and Vibration Strains in Shafting, are included.

The Committee has been cooperating with the Publication and Papers Committee by preparing the section on Engineering Research published in MECHANICAL ENGINEERING, and with the Committee on Local Sections through the appointment of local sub-committees on Research.

Standardization Committee. The work of this Committee has proceeded along three distinct lines, (a) presenting recommendations to the Council for the acceptance of sponsorships in standardization, proposed chiefly by the American Engineering Standards Committee, (b) forming sectional committees under the rules of the A.E.S.C., and (c) selecting members of the Society to represent it on sectional committees organized by other standardizing bodies in the United States.

The details of these activities are given in the report.

Boiler Code Committee. The Committee has continued its regular meetings for rendering interpretations of the Code.

Sub-committees on Boilers of Locomotives and on Air Tanks and Pressure Vessels have presented reports.

The maintenance of the affidavits covering the sale of boiler stamps is still continued, as well as the sale of the publications connected with the Code. The volume of this work has become very heavy.

Education and Training Committee. This is now a permanent Committee authorized by the Council on the recommendation of the Special Committee on Education Below College Grade, the actions of which Special Committee the report enumerates.

The Special Committee recommended a permanent Committee to communicate with other agencies and associations in regard to classifying and reporting the different systems of training for men in the industries, in the hope that greater unity of purpose in engineering education may be brought about.

The Committee recommends the formation of sub-committees (a) for relations with colleges, (b) for relations with public and private vocational schools, and (c) for relations with corporation schools.

Awards and Prizes Committee. The Special Committee recommends a permanent Committee to institute and administer the following awards by the Society: (a) Honorary Membership (b) Life Membership, (c) A.S.M.E. Medal, (d) Honorable Mention, (e) Scholarships or Fellowships, (f) Junior Medal (the present Junior Prize), (g) Two Student Medals (the present Student Prizes).

The report lists the funds already established and available to carry out some of these awards.

Code of Ethics Committee. This is the final report of the Special Committee on Code of Ethics, the first reading of which was made at the Spring Meeting of 1920.

The report recommends a Code of Ethics common to engineers of every branch of the profession and also to architects.

A comprehensive Code, consisting of fourteen clauses, is appended to the report. This has already been published in MECHANICAL ENGINEERING.

Weights and Measures. The Committee has concerned itself chiefly with watching metric legislation, and the report lists the organizations which have gone on record as opposing the compulsory adoption of the metric system, and also those which have favored it. The committee proposes to continue its work of securing facts which would form a basis for intelligent action.

Power Test Codes. The work of revising the individual codes of the Power Test Codes, inaugurated last year, has proceeded satisfactorily and two of the revised codes have been presented to the Council and order submitted to the Society for discussion before final adoption.

Coöperation with other Organizations. The usual appointments were made of representatives of the Society to coöperate in the numerous joint activities. The names of these activities and the members appointed are to be listed in the Year Book of the Society for 1921.

Recent Section Meetings

AKRON:

December 17. In the rooms of the Engineering Society of Akron. President E. S. Carman addressed the meeting.

ATLANTA:

December 28. "Impressions of the Annual Meeting," by N. C. Harrison of Atlanta, Ga.

BOSTON:

December 17. Joint meeting with the Boston Society of Civil Engineers. "Water Powers of New England," by H. K. Barrows, Cons. Engr., Boston, Mass. and W. S. Murray, Cons. Engr., New York City.

BUFFALO:

December 21. "Industrial Application of Electric Furnaces," by E. F. Collins, of the General Electric Company.

CHICAGO:

November 22. Celebration of the 40th Anniversary of the Society at the Sherman Hotel. "Industries' Supply of Energy," by Dr. G. O. Smith, of the U. S. Geological Survey, Washington, D. C. "The A.S.M.E.," by H. S. Philbrick. "Early Recollections of the Society," by Captain Robert W. Hunt.

CINCINNATI:

November 5. "The A.S.M.E.," by James B. Stanwood. "The Work of the Local Engineers," by George W. Galbraith.

COLORADO:

November 26. Celebration of the 40th Anniversary. Dr. George H. Norlin, Pres. of the University of Colorado, spoke on Engineering at the University of Colorado. "The Activities of the A.S.M.E.," by T. L. Wilkinson.

COLUMBUS:

December 10. "Emergency Work in Power Plant Operation," by E. A. Hitchcock, Dean Eng. College, Ohio State University. Movies of A. M. Byers Genuine Wrought Iron Pipe Manufacturing.

CONNECTICUT:

HARTFORD BRANCH:

December 6. "The Prevention of Grinding Wheel Accidents," by A. Rousseau, Norton Co., Worcester, Mass. "The Art of Grinding Becomes a Science in 1920," by W. H. Chapman of the same company. Both addresses were illustrated with lantern slides.

MERIDEN BRANCH:

November 23. "Making of Power," by George A. Orrok, Consulting Engineer, New York City.

WATERBURY BRANCH:

December 6. Mr. Darragh de Lancey gave a talk on his experiences in the Shipping Board.

DETROIT:

December 3. Joint meeting with Michigan Heating and Ventilating Society. "Modern Efficiency of Heating and Ventilating," by Dr. Hill.

LOS ANGELES:

December 11. Inspection of the Los Angeles Shipbuilding & Drydock Co. and then an inspection of the harbor was made by boat. In the evening, James Reed gave a talk on some of the interesting phases of his shipbuilding work.

METROPOLITAN:

December 3. Joint meeting with the A.I.E.E. and the Taylor Society. "The Three-Shift System in the Steel Industry," by Horace B. Drury, recently with the Industrial Relations Division of the U. S. Shipping Board. "The Point of View of the Manufacturer," by Wm. E. Dickson, Vice-President of the Midvale Steel & Ordnance Co.

December 15. Meeting of the New York Section A.S.C.E. Members of the A.S.M.E. were invited to attend. Subject: "The Port of New York."

ONTARIO:

November 19. Joint meeting with Toronto Branch of the American Society of Steel Treating. "The Manufacture of High-Speed Steel," by F. Kremp, Canadian Atlas Crucible Steel Co. This address was illustrated with motion pictures.

PHILADELPHIA:

December 13. Joint meeting with A.I.E.E. of Philadelphia. "Super Power Survey," by W. S. Murray, Chairman of the Super Power Survey, Department of Interior.

PROVIDENCE:

December 14. Joint meeting with Machine Shop Section, Providence Engineering Society. "The Engineer in a Republic," by Charles H. Norton, Norton Grinding Co., Worcester, Mass.

ROCHESTER:

November 26. Debate on "The Compulsory Adoption of the Metric System." Howard Richards, Jr. of New York City and Luther D. Burlingame of Providence, R. I. debated.

ST. LOUIS:

November 26. Mr. Hugh K. Warner spoke on "What Constitutes Jay Automobile Driving."

TOLEDO:

November 4. Celebration of the 40th Anniversary. "New Developments in Steam Distribution," by George H. Hartman, Locomotive Appliance Co., Toledo, Ohio.

WASHINGTON, D. C.:

December 2. "Development of Artillery Material," by Major G. F. Jenks, U. S. A. "The Scientific and Engineering Work of the Government," by Dr. Edward B. Rosa, Chief Physicist, National Bureau of Standards, Washington, D. C.

WASHINGTON STATE:

December 15. "Mechanical Engineering of Public Buildings," by E. L. Weber, Consulting Domestic Engineer.

Coming Section Meetings

Atlanta.

January 25. Joint meeting with Atlanta Section A.S.C.E. in Carnegie Library, Atlanta, Ga. Subject: Water Power Development, by B. M. Hall, Georgia Railway & Power Company, Atlanta, Ga.

Cleveland.

January 4. In Cleveland Engineering Society Rooms, Hotel Statler. Recent Developments and Modern Tendencies in Machine Design, by A. L. De Leeuw, 127 Water Street, N. Y. City.

Colorado.

January 28. At the Metropole Hotel. Industrial Expansion of Colorado, by Charles C. Gates, President Gates Rubber Company.

Columbus.

January 14. At the Engineers' Club, Southern Club. The Story of Petroleum (Motion Picture from the Bureau of Mines).

Connecticut.

Hartford Branch.

At the City Club. Mr. C. E. Leshner, Editor of *Coal Age*, will address this meeting.

Waterbury Branch.

January 3. In Chase Co.'s Office Building, Waterbury, Conn. Subject: Mining Experiences of a Prospector, by Capt. Harry George. Moving Pictures of Byers Wrought Iron Pipe will be shown.

Metropolitan.

January 28. At Engineering Societies Building. Subject: Marine Electrical Engineering, Mr. Alfred E. Waller in charge of meeting.

Philadelphia.

January 25. At Engineers' Club of Philadelphia. Subject: Water Treatment for Boilers, by Julian S. Simson, Chemical Engineer.

St. Louis.

January 7. At the American Hotel. The Key Safety Hand-Hole Cap for Water-Tube Boilers, by Fred Key, Key Boiler Equipment Co.

Toledo.

January 11. At the Toledo Commerce Club. The Need of Business Training in Engineering, by Dr. Quillan, Toledo University.

PERSONALS

ARTHUR CUTTS WILLARD, professor of heating and ventilation in the department of mechanical engineering at the University of Illinois, has been appointed head of the department to succeed Dean C. R. Richards who since his election as Dean of the College of Engineering and Director of the Engineering Experiment Station has continued to serve as the acting head of the department of mechanical engineering.

JAMES W. NESBITT, formerly superintendent of the Johnson Company, Detroit, Mich., is at present employed as general superintendent of the Wisconsin Motor Mfg. Co., Milwaukee, Wis.

DONALD L. DERROM, formerly manager of manufacturing, The Isko Company, Chicago, Ill., is now with the Trading Engineers, Inc., Sao Paulo, Brazil, S. A.

ROBERT LACY announces his resignation from the Geo. T. Ladd Company, Pittsburgh, and appointment as sales engineer by the Rush Machinery Company, Pittsburgh, to act as their representative for steam equipment specialties and water-tube boilers.

H. M. LOWENSTEIN, formerly designing with the De La Vergne Machinery Company, is now designer for the Babcock & Wilcox Co., Bayonne, N. J.

WM. F. EPPENSTEINER, until recently with the U. S. Metals Refining Company of Chrome, N. J., is now connected with the American Smelting & Refining Co., Perth Amboy, N. J., in the Maurer, N. J., plant of that company.

JOSEPH J. ZUMBERG announces a change of position from assistant chief draftsman for the Cincinnati Milling Machine Company to chief draftsman for The Oesterlein Machine Company of Cincinnati, Ohio.

ROBERT LOCK, formerly president of the Vulcan Iron & Steel Co. of Pittsburgh, Pa., is now president of The Ashtabula Steel Company, Ashtabula, Ohio.

E. H. ALDWORTH, formerly assistant chief engineer with R. Martens & Co., Inc., New York, is now chief engineer with Livermore, Rojas & Co., Inc., New York.

R. J. S. PIGOTT, formerly industrial engineer for the Bridgeport Chamber of Commerce, is now with the Crosby Steam Gauge & Valve Co., Boston, Mass.

C. B. MANSFIELD, formerly with The Palmetto Phosphate Company, Tiger Bay, Fla., has been appointed supervising engineer for the International Agricultural Corporation, with office in Mulberry, Fla.

J. T. GEOGHEGAN has resigned his position as mechanical engineer, Southern Railway Lines West, at Cincinnati, and is now with the American Car and Foundry Company, Chicago, as sales engineer.

O. R. RANDOLPH has resigned his position as assistant engineer to the State Corporation Commission of Virginia and has accepted a position on the staff of the Moody Engineering Company, Inc., New York City.

L. W. BODINSON, formerly with The American Well Works, Aurora, Ill., is now vice-president of the Aurora Pump and Manufacturing Company, Aurora, Ill.

HERBERT A. CARHART, has resigned as assistant superintendent of the Lincoln Motor Company, Detroit, and organized the firm known as Carhart Bros. Foundry, Inc., Syracuse, N. Y., producers of gray-iron castings for textile machinery and other light to medium machine parts. Mr. Carhart is president and manager of the new firm.

EDWIN A. BYNUM, JR., is now construction foreman with the Production Department Engineers of the Humble Oil & Refining Co. at Cisco, Texas.

HENRY P. GALE is now associated with the Menomonee Falls Mfg. Co., Menomonee Falls, Wis.

G. B. NICHOLS, formerly chief engineer, Department of Architecture of the State of New York, and for the last eight months power specialist for the Du Pont Engineering Company, Wilmington, Del., has now been recalled by the State of New York to take charge of the construction of a military hospital to be built by the State of New York in conjunction with the Federal Government for the proper care of insane veterans of the World War. This hospital, which will have a capacity of 1000 beds, is to be built at Jamaica, L. I., at the earliest date possible. The actual construction of the buildings is being undertaken by the state.

THOMAS E. HYDE has become associated with The National Pipe Bending Company of New Haven, Conn., as factory manager. He was formerly works manager of the Huhn Manufacturing Company, Arlington, N. J.

W. S. QUIGLEY, president of the Quigley Furnace Specialties Company, New York City, has just returned from Europe after an extensive trip made in connection with large installations of the Quigley powdered-coal system in Italy and Belgium.

Prof. EDWARD J. KUNZE, head of the department of industrial engineering at the Pennsylvania State College, was elected a director and vice-president in charge of research, of the Society of Industrial Engineers at their convention held in Pittsburgh on November 10, 11 and 12, 1920.

C. F. MEYER, assistant secretary of the Landis Machine Company, Waynesboro, Pa., will leave shortly for an extended trip to the Orient in the interests of his company. Mr. Meyer will visit England, India, the Dutch East Indies, Australia, Philippine Islands, China, Japan and the Hawaiian Islands.

HARRY E. HARRIS, consulting engineer of the firm of Hubbard & Harris, Inc., now has associated with him Ralph K. Rowell, recently equipment engineer with the International Motor Corporation. Mr. Rowell has had an extensive experience in the automobile, truck and tractor line and will take care of this branch of the work for Hubbard & Harris, Inc. Mr. Harris has been elected president and Mr. Rowell vice-president of this firm, the name of which is to be changed to Hubbard, Harris & Rowell, Inc.

RICHARD FITZ-GERALD, with the Lybrand Ross Brothers & Montgomery, accountants and auditors, has been appointed associate manager of the Detroit office of that company. The practice of industrial accounting, cost finding and factory systematizing will be conducted under the supervision of Mr. Fitz Gerald.

GEORGE MACNOE is now associated with W. B. Connor, Inc., New York, engaged in the sale of power-plant equipment.

E. H. WHITNEY has recently become associated with the Westinghouse Lamp Company as district illuminating engineer of their New England office at Boston, Mass.

RAY MAYHEW, recently motor engineer with the American Hoist & Derrick Co., St. Paul, has taken a position with the Clyde Iron Works, Duluth, Minn.

LEON H. JOHNSON has severed his connection as general manager with the Anderson Foundry and Machine Co. and will in the future be at the head of an engineering firm specializing on oil-engine power plants as well as manufacturing oil engines, Anderson, Ind.

CHARLES G. KESHEN is now associated with The Gifford-Wood Company of Hudson, N. Y., as an engineer on coal-handling and conveying apparatus. He was formerly with The Lamson Company of Boston, Mass.

P. SBRULINO, formerly connected with Hare's Motors, Inc., at the Locomobile Plant, Bridgeport, Conn., has accepted a position in the engineering department of the National Cash Register Company, Dayton, Ohio.

GEORGE A. WARD, formerly with the Wilputte Coke Oven Corporation of New York City, is now connected with the engineering department of the International Coal Products Corporation, Newark, N. J.

P. J. BRYANT is now assistant to the works manager of The Wyman-Gordon Company, Worcester, Mass. He was formerly chief engineer at the U. S. Military Academy, West Point, N. Y.

C. H. ISRAEL, who was works manager for the National Marine Engineering Works, Scranton, Pa., announces that he has been appointed eastern representative for the Kingsford Foundry and Machine Works of Oswego, N. Y. Mr. Israel is located in the Philadelphia office of this company.

RALPH T. BRATT has severed his connection with Olney and Warrin, Inc., and is now employed in the industrial department of the Locomotive Superheater Company, New York.

W. A. B. HICKS, formerly assistant to the manager, I. P. Morris Department, Wm Cramp & Sons, Philadelphia, is now with the Dominion Engineering Works, Ltd., Montreal, Canada.

CHARLES L. LANGLOTZ is now assistant manager of the export division of H. H. Robertson Company, New York. He was formerly assistant regional manager of the Allied Machinery Company of America, New York.

WEBSTER TALLMADGE, who has been connected with the Westinghouse Electric & Mfg. Co., South Philadelphia Works, Lester, Pa., is now manager of the power division of Thomas A. Edison Industries, Orange, N. J.

WALLACE H. MARTIN has resigned as associate professor of mechanical engineering at the Pennsylvania State College and is now professor of heat engineering at the Oregon Agricultural College.

JOHN BRESLAV, formerly sales engineer, manager of publicity, and production manager of the Terry Steam Turbine Company of Hartford, is now owner of the J. B. Engineering Sales Company, of Hartford, which has recently been appointed Connecticut sales agent of the Conveyors' Corporation of America, formerly American Steam Conveyor Corporation. Mr. Breslav's company is also sales agent for the Griscom-Russell Company and the Terry Steam Turbine Company.

NECROLOGY

WILLIAM WALTER DINWIDDIE

William W. Dinwiddie, research and experimental engineer, Laboratory of Thomas A. Edison, Inc., Orange, N. J., died on October 6, 1920. Mr. Dinwiddie was born on November 4, 1876, in Greenwood, Va. He received his early education in the home schools and later attended the University of Virginia, from which he received the degrees of A.B. and M.E. For several years he was connected with the U. S. Naval Observatory as computer and during this period he was a member of eclipse expeditions to Georgia (1900), Sumatra (1901) and Africa (1905). From 1906 to 1908 he was connected with the Ames-Bonner Co., Toledo, Ohio, as superintendent. At the close of that period he became general manager for the Alvan Clark & Sons Corporation, Cambridgeport, Mass., manufacturers of astronomical instruments. For the past eight years Mr. Dinwiddie was associated with the Thomas A. Edison Co., Inc., first as manager of the disk record division and subsequently as research and experimental engineer.

Mr. Dinwiddie was a member of the masonic order. He became a member of the Society in 1915.

MURRAY WARNER

Murray Warner, Major in the Quartermaster Corps of the United States Army, died suddenly on October 2, 1920, in San Francisco, Cal. A military funeral was held on the afternoon of October 4 from the home of Mr. Walter Bliss (a Technology classmate of Major Warner's) with an escort of one battalion of infantry, pallbearers of non-commissioned officers and a military band. Services were held in the Presidio Chapel.

Major Murray was born on March 8, 1869, in Clinton, Ill. He was prepared for college in Phillips Academy, Exeter, and then entered the Massachusetts Institute of Technology, from which he received the degree of B.S. in 1892.

His first position was as draftsman with the American Wheelock Engine Co. where he remained two years, when he became connected with the California Engineering Co. From 1896 to 1900 he was with the International Power Co., his work dealing with the design and erection of power plants. In 1900 Major Murray was appointed by the American Trading Co. to establish an engineering department for them in China. Three years later the firm of Murray Warner & Co., consulting engineers and contractors, was established in Shanghai. In 1910 Major Murray retired from active engineering work not to enter it again until July 1917, when, as a "dollar-a-year-man," he was made construction quartermaster at Camp Dix, Wrightstown, N. J. In November, 1917, he was commissioned a Major in the Q.M.C. and put in charge of the utilities at Camp Dix where he served until the signing of the armistice. Major Murray refused a colonelcy in Washington, believing that he could render a greater service at Camp Dix. After the armistice he was transferred to the Mexican border, where he rendered unusually efficient service. At the time of his death he was stationed at San Francisco on General Liggett's staff, in charge of the utilities of the Western Department.

During the Spanish-American War, Major Murray had served as a lieutenant in the Navy. At the time of the Boxer Rebellion he was in charge of the American Company of Volunteers, organized to protect foreign settlement in Shanghai, China. He was twice president of the American Association of China, which represented and controlled all American interests in that country. He was a 32nd degree Scottish Rite mason, belonging to the Shanghai Chapter. He became a member of our Society in 1918.

ALEXANDER McDONALD GRAVER

Alexander M. Graver, vice-president and assistant general manager of the Graver Corporation, East Chicago, Ind., died on January 31, 1920, of pneumonia. Mr. Graver was born on May 15, 1883, in Alleghany, Pa. He attended the University of Michigan where he received the degree of B.S. in 1905 and M.S. in mechanical engineering in 1906. Upon graduation he became actively associated with the Graver Corporation. His first duties dealt with engineering on plant equipment. Later he became purchasing agent for the firm, and then sales manager, which position he held until January 1, 1920, when he was appointed vice-president and assistant general manager.

Mr. Graver was a member of several fraternal organizations. He became a junior member of the Society in 1908.

WALTER EDWARD MARSHALL

Walter E. Marshall, manager of the Buffalo office of the Warner & Swasey Co., died on August 5, 1920. Mr. Marshall was born on October 24, 1868, in Liverpool, England. He was educated in English schools. He came to this country in 1886 and entered the employ of the Warner & Swasey Co., Cleveland, Ohio, as an apprentice. Having completed his apprenticeship he was appointed foreman of the planer department. In 1892 he became superintendent and foreman for the Bardons & Oliver Co., Cleveland, where he remained until 1900 when he was offered the position of manager of Dyson and Sons' Forge Shop, also in Cleveland. In 1904 he returned to the Warner and Swasey Co. and for the past seven years was manager of their Buffalo office.

Mr. Marshall was a member of the Rotary Club of Buffalo. He became a member of the Society in 1919.

ALVA C. RICE

Alva C. Rice, who retired from active consulting work several years ago, died on July 8, 1920, in Worcester, Mass. Mr. Rice was born on July 23, 1845, in Nicholville, N. Y. He received a common-school education and began work in a flour mill. He became interested in millwright and contracting work and for a time was employed in this business in northern New York. In 1874 he became associated with the Holyoke Machine Co., Holyoke, Mass. having charge of the wood-shop and millwright work. Later he built the Worcester shops for this company and upon their completion became superintendent. In 1885 he removed to Dayton, Ohio, as superintendent and engineer for the Stillwell & Bierce Manufacturing Co., in which position he remained until 1899 when he returned to Worcester and opened consulting offices. His work was mostly on hydraulic power plants and pulp and paper-mill installations and until his retirement he was considered one of the leading engineers in those lines.

He was the designer of plants for the Chamblay Manufacturing Co., the Hudson River Power Co., Montmorency Electric Power Co., Belgo-Canadian Pulp Co., Paul Smith Hotel Co., Hartford Electric Light Co., Greenfield Electric Light Co., and many others. He was also the designer of the Lachine Rapids turbine installation on the St. Lawrence River, and

served as consulting engineer on several of the Niagara Falls plants and the plant of the St. Lawrence River Power Co. at Massena, N. Y.

Mr. Rice was a member of the masonic order. He became a member of the Society in 1890.

SAMUEL A. LINTON

Samuel A. Linton, chief of the estimating department of the Pratt & Whitney Co., Hartford, Conn., was killed in an automobile accident at Milford, Conn., on August 9, 1920. Mr. Linton was born on September 11, 1860, in Hartford, Conn. and received his early education in that city. At the age of seventeen he entered the employ of Pratt & Whitney as an apprentice machinist and tool maker. Twelve years later he became foreman of the machine-tool department of Morris Tasker & Co., Philadelphia. In 1890 he became connected with the S. S. White Dental Co as foreman of their instrument department. In 1892 he returned to the Pratt & Whitney Co., and with the exception of two years with the C. J. Smith & Sons Co., Milwaukee, and three years with the Ideal Machine Co., Hartford, was with the company until the time of his death. For the past 14 years he held the position of chief of the estimating department.

Mr. Linton became a member of the Society in 1918.

WILLIAM T. PRICE

William T. Price, chief engineer of the oil-engine department of the Ingersoll-Rand Co., died on November 7, 1920. Mr. Price was born on September 28, 1883, in Montreal, Quebec, Canada. He was graduated from Cornell University in 1906 with the degree of M.E. His first employment was with the Wheeling Mold & Foundry Co. as assistant engineer, where he was located for about a year when he became works manager of the Contractors' Plant Manufacturing Co. In 1908 he became connected with the De La Vergne Machine Co., as sales engineer and during the course of the next six years held the positions of sales manager, chief engineer of the power department and manager and chief engineer. At the time of his death he was actively associated with the Ingersoll-Rand Co. as chief engineer of the oil-engine department. He was also vice-president of the Rathbun-Jones Engineering Co., Toledo, Ohio.

Mr. Price was a member of the Society of Automotive Engineers and the Engineers' Club of New York. He became a junior member of the Society in 1910 and was promoted to full membership in 1915.

PERCY BELL TAYLOR

Percy Bell Taylor, consulting engineer in mechanical and electrical lines, Newark, N. J., died at his home in that city on October 21, 1920. Mr. Taylor was born in Manchester, England, on May 26, 1865, and when eight years of age came to the United States. In 1881 he entered the employ of Cyrus Currier & Sons, machinists, at Newark, N. J., and remained with that organization for sixteen years, during which time he occupied various positions, finally becoming mechanical engineer for the company.

He later organized the Taylor-Martin Co., designers and manufacturers of special machinery and tools. In 1897, Mr. Taylor dissolved this organization to engage independently as a consulting engineer. Many notable power-plant, machinery and general engineering installations were made under his design and supervision. Of recent years, Mr. Taylor undertook complete plant construction, including power and electrical installations, as well as machinery. For a number of years he was employed as consulting expert by the Board of Education for the installation of heating and ventilating equipment and electrical apparatus in the local public schools.

Mr. Taylor was a registered architect in New Jersey and a member of the New Jersey Society of Architects and of the Board of Trade. He also belonged to several clubs and to the masonic order. He became a member of the Society in 1909.

CLARENCE VOSE

Clarence Vose, who became a member of the Society in 1891, died on August 21, 1920. Mr. Vose was born in Providence, R. I., on January 8, 1845. He received his education in the public schools of that city and later attended business college. Mr. Vose was connected for a time with the United States Engineer's Office at Newport, under General G. K. Warren. From there he entered the service of the Standard Oil Co. with whom he remained for about thirty years until his retirement nearly twenty years ago. During his active career he also held the position of superintendent of the Queens County Oil Works and of works manager of the Pratt Manufacturing Co. Later he was with the Standard Oil Co. of New York.

ERNEST HENRY WOOD

Ernest H. Wood, mechanical engineer, Eastern Malleable Iron Co., died on February 24, 1920. Mr. Wood was born on June 10, 1880, in Naugatuck, Conn. He was educated in the schools of Naugatuck and later attended Pratt Institute, from which he was graduated in 1903. Mr. Wood was associated throughout his professional career with the Eastern Malleable Iron Co., being transferred in 1905 from their Naugatuck plant to the works at Wilmington, Del. Mr. Wood's work was in industrial engineering, covering mechanical and electrical design, and the construction and maintenance of industrial plants and equipment connected with the iron and steel industry.

During the War Mr. Wood was appointed Director of Conservation for the Fuel Administration of Delaware. He became a member of the Society in 1913.